REMARKS

Claims 1-9 and 14-17 are pending in the present application. Applicants respectfully request reconsideration of the rejection of the pending claims in light of the foregoing amendments and the following arguments.

Claims 14 and 17 have been added. Support for claim 14 can be found on page 12, lines 9-11. Support for claim 15 can be found on page 11, lines 13-18 and page 12, lines 12-17. Support for claim 16 can be found throughout U.S. Patent No. 5,451,355 which was incorporated by reference into the present application. Support for claim 17 can be found on page 9, lines 19-22. Examination of these claims is respectfully requested.

Restriction/Election Requirement:

The Action requires an election between the invention of Group I (claims 1-10) drawn to a reinforcement for cementitious boards, and the invention of Group II (claims 11-13)drawn to cementitious boards. Applicants confirm their election of Group I, which now includes claims 1-9 and 14-15.

Claims Rejection under 35 U.S.C. § 102

The Action rejects claims 1 and 4 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,183,835 to Cho et al. Claim 1 has been amended to include the limitation that the strands are coated prior to formation of the open mesh. Further, claim 8 has been amended to include all of the limitations of original claim 1. Amended claim 1 now recites that "prior to formation of the open mesh said alkali-resistant thermoplastic material is applied to said strands to provide a substantially continuous coating of said alkali-resistant thermoplastic material about said strands". Claim 8 recites that the thermoplastic material is fibrous prior to fusing.

Cho et al. disclose a reinforced fiber sheet for use in repairing or reinforcing concrete structures wherein the sheet includes a net-shaped fabric substrate formed by cross-arranging organic or inorganic fiber strands and impregnating them with thermoplastic resins, and reinforcing fibers which are attached and bonded to the substrate by the thermoplastic resin.

With respect to amended claim 1, Cho et al. do not disclose that the thermoplastic material is applied to the fiber strands of the substrate prior to formation of the open meshas required by amended claim 1. Rather, the reference teaches that the substrate is "formed by cross-arranging organic or inorganic fiber strands in two or more directions and then impregnating them with a thermoplastic resin" (column 2, lines 55-58, emphasis added). Therefore, claim 1 should be allowable over Cho et al. As claim 4 depends from claim 1, it should be allowable for the same reason.

With respect to amended claim 8, Cho et al. do not teach or suggest that the thermoplastic material is fibrous, but rather state that the net-shaped fabric is impregnated with the thermoplastic resin, implying that such resin is in a liquid state and is painted on. Therefore, claim 8 should be allowable over Cho et al.

The Action further rejects claims 1 and 4-6 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,763,043 to Porter et al. Porter et al. do not disclose that the thermoplastic material is applied prior to formation of the mesh (claim 1) or that the thermoplastic material is fibrous (claim 8) prior to fusing. Rather Porter et al. teaches that the "strands of the open grid fabric of the invention are 'pre-coated'", wherein "'pre-coating'" refers to the application of resin to the rovings of the grid after the fabric is made" (column 5, lines 54-57, emphasis added), rather than before the mesh is made as required by claim 1. Further, Porter et al. states that the "polymeric coating is applied to the fabric at a level of 10 to 150 parts dry weight of resin to 100 parts by weight of the fabric while assuring that the open grid remains open" (abstract), thus inherently implying that the resin was never in a fibrous state. Therefore amended claims 1 and 8 should be allowable over this reference. As claims 4-6 depend from claim 1, they should be allowable for the same reason.

The Action further rejects claims 1-5 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,054,205 to Newman et al. Newman et al. disclose a glass fiber facing sheet for cement boards including an open mesh glass scrim and a melt blown polymer web. The scrim is formed by a plurality of intersecting glass yarns which are bonded at their cross-over points with a polymeric binder. The polymeric binder may be polyvinylidene chloride. Newman et al. do

not disclose that the polymeric binder is applied prior to formation of the mesh (claim 1) or that the polymeric binder is fibrous (claim 8) at any time. Rather, Newman et al. state that "[g]enerally, the glass scrim 15 is coated by the polymer coating by passing the glass scrim through a resinous bath containing the coating and then allowing the coating to harden on the surface and throughout the . . . yarns" (column 8, lines 6-11). Therefore, claims 1 and 8 should be allowable over this reference. As claims 2 and 4-5 depend from claim 1, they should be allowable for the same reason. As claim 3 depends from claim 8, it should be allowable as well.

Claim Rejection under 35 U.S.C. § 103

The Action rejects claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Newman et al. As stated above, Newman et al. fail to teach or suggest the limitation of applying the coating prior to formation of the mesh as required by amended claim 1, from which claim 7 depends. Therefore, claim 7 should be allowable for the same reasons as discussed above with respect to amended claim 1.

The Action also rejects claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Newman et al. in view of Porter et al. Again, as addressed above, neither Porter et al. nor Newman et al. teach or suggest the limitation of applying the coating prior to mesh formation as required by amended claim 1. As claim 6 depends from claim 1, it should be allowable for the same reasons.

The Action further rejects claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Newman et al. in view of U.S. Patent No. 6,171,984 to Paulson et al. Claim 8 has been rewritten in independent form and recites a "reinforcement for cementitious boards comprising an open mesh of high modulus of elasticity fiber strands covered by alkali-resistant thermoplastic material, wherein said thermoplastic material is initially fibrous, and wherein at least a portion of the fibrous thermoplastic material is fused or sintered such that said portion of the fibrous thermoplastic material is merged into a continuous mass which substantially encapsulates a respective high modulus of elasticity fiber strand."

As conceded by the Examiner, Newman et al. do not disclose that the thermoplastic material is fibrous at any point. Paulson et al. disclose a geosynthetic material for earth reinforcement including a first and second plurality of parallel strands which intersect each other. The strands may be comprised of a combination of polymeric and inorganic fibers, and either may form a core material surrounded by the other. However, Paulson et al. do not teach or suggest that the polymeric fibers, or any portion thereof, may be fused or sintered such that such portion of fibers is merges into a continuous mass which encapsulates the other fibers. Rather Paulson et al. teach that a base coating is applied to impregnate the fibers of the strand to provide cohesion and that a bonding agent is applied to adhere predetermined regions of the selected weft fibers with selected warp fibers. Therefore, claim 8 should be allowable over the cited references.

The Action further rejects claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Newman et al. and Paulson et al., and further in view of U.S. Patent No. 4,967,548 to Fangeat et al. or U.S. Patent No. 6,335,087 to Hourahane. However, both Fangeat et al. and Hourahane fail to correct the deficiencies of Newman et al. or Paulson et al. with respect to teaching or suggesting that a thermoplastic fibrous material, or any portion thereof, may be fused or sintered such that such portion of fibers is merged into a continuous mass which encapsulates the other fibers.

Fangeat et al. relates to textile yarns and discloses a fire-resistant yarn comprising an inorganic filament core surrounded by fibers formed at least in part from aramid resin. There is no suggestion whatsoever of fusing or sintering these fibers to encapsulate the core, as this would be counter to the purpose of the aramid fibers, which, at least in part, is to deteriorate rather than melt at elevated temperatures (column 1, lines 13-17). Therefore, claim 9 should be allowable over this combination of references.

Hourahane discloses a yarn used in cement matrices which includes a core and a multitude of staple fibers forming a layer which envelopes the core. The staple fibers serve the purpose of providing a means for the cement matrix to grip the core strands, not for providing a continuous mass which encapsulates the core, as required by at least a portion of the fibrous

thermoplastic material of claim 8. Further, Hourahane teaches away from such a limitation by teaching that the interstices between the staple fibers provides a void space which can be infiltrated by the cement matrix, which as the matrix crystallizes envelopes the staple fibers, thus forming a composite interface between the core and the cement matrix (column 2, lines 12-21). Therefore, claim 9 should be allowable over this combination of references.

Finally, claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Newman et al. in view of U.S. Patent No. 5,451,355 to Boissonnat et al. Claim 10 has been cancelled and the limitations of claim 10, now revised for clarity, included in new claim 16. New claim 16 recites that the thermoplastic material is applied via cross head extrusion to said strands .

As conceded by the Examiner, Newman et al. does not teach that the thermoplastic material is applied via cross head extrusion to the strands to provide a continuous coating about the strands. Boissonnat et al. discloses a process for manufacturing a thread which is coated with a thermoplastic organic material using an extruder head which is supplied with the thermoplastic material. However, there is no suggestion whatsoever in either reference to use the cross head extrusion method of Boissonnat's for the glass fiber facing sheet of Newman. First of all, the combination of reinforcing threads and thermoplastic materials used in Boissonnat et al. are for forming composite products, the combination being the product itself, rather than a relatively minor portion of an end product, such as is the case for the coated open mesh of the present application which is used as a reinforcement for cementitious boards. The examples in Boissonnat et al. disclose very heavy, thick fabrics (600 tex or more) for deforming into moulds or thermoformed parts, unlike the very thin, fine fabrics that would be employed in the present invention or in Newman et al. Further, it would not be obvious to use the extrusion method of Boissonnat et al. in Newman, as the method of Boissonnat et al. is much more expensive than the typical dip coating used for impregnating reinforcing fabrics in cementitious matrices. Therefore, claim 1 should be allowable over the combination of New et al. and Boissonnat et al.

In view of the foregoing remarks and amendments, Applicants submit that this application is in condition for allowance at an early date, which action is earnestly solicited.

The Assistant Commissioner for Patents is hereby authorized to charge any additional fees or credit any excess payment that may be associated with this communication to deposit account **04-1769**.

Respectfully submitted,

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Version of Claim with Markings to Show Changes Made:

Claims 1-4 and 8-9 have been amended as set forth below. New claims 14-16 have been added.

1. (Amended) A [R]reinforcement for cementitious boards comprising an open mesh of high modulus of elasticity fiber strands [continuously] covered by an alkali-resistant thermoplastic material, wherein prior to formation of the open mesh said alkali-resistant thermoplastic material is applied to said strands to provide a substantially continuous coating of said alkali-resistant thermoplastic material about said strands.

2. (Amended) The reinforcement of claim 1 wherein said mesh is heated after formation thereof to fuse said thermoplastic material to allow bonding at areas where said strands intersect.

3. (Amended) The reinforcement of claim 8 [1] wherein said mesh is heated after formation thereof to fuse or sinter said portion of the fibrous thermoplastic material to form said substantially continuous mass [provide a continuous coating of said thermoplastic material on said strands].

4. (Amended) The reinforcement of claim 1 wherein said thermoplastic material is selected from the group consisting of polyolefins, olefin copolymers or polyvinylidene chloride [ethylene propylene rubber, thermoplastic polyolefin rubber, polyvinylidene chloride, ethylene-propylene diene monomer and copolymers of polybutylene and propylene].

8. (Amended) [The reinforcement of claim 3] A reinforcement for cementitious boards comprising an open mesh of high modulus of elasticity fiber strands covered by alkali-resistant thermoplastic material, wherein said thermoplastic material initially is fibrous, and wherein at least a portion of the fibrous thermoplastic material is fused or sintered such that

the said portion of the fibrous thermoplastic material is merged into a substantially continuous mass which substantially encapsulates a respective high modulus of elasticity fiber strand.

9. (Amended) The reinforcement of claim 8 wherein said fibrous thermoplastic material is friction spun as a fibrous sheath on a core comprised of said high modulus of elasticity strand[s].

14. (New) The reinforcement of claim 8, wherein the high modulus of elasticity fiber strands comprised E-glass, and wherein the fibrous thermoplastic material comprises a core sliver of thermoplastic fibers commingled with the high modulus of elasticity fiber strands, and a plurality of sheath thermoplastic fibers which cover the core sliver thermoplastic fibers and high modulus of elasticity fiber strands.

15. (New) The reinforcement of claim 14, wherein the core sliver of thermoplastic fibers comprise one or more of isotactic or syndiotactic polypropylene, ethylene-propylene copolymers or other olefinic fibers, nylon, polyvinyl chloride, or polyester, and wherein the sheath fibers comprise one or more of polypropylene, polyethylene, copolymers of polybutylene and propylene, ethylene propylene rubber, thermoplastic polyolefin rubber, polyvinylidene chloride, and ethylene-propylene diene monomer.

16. (New) The reinforcement of claim 1, wherein said alkali-resistant thermoplastic material is applied via cross head extrusion to said strands.

17. (New) The reinforcement of claim 1 wherein said olefin copolymers include ethylene propylene rubber, thermoplastic polyolefin rubber, ethylene-propylene diene monomer or copolymers of polybutylene and propylene.